

bp

RECEIVED
CENTRAL FAX CENTER

APR 14 2006

BP Legal – Warrenville, IL

April 14, 2006

Total Number of Pages:
5

(Including this page)

- Facsimile Transmission -To: Examiner Taylor Victor Oh
USPTO

From:

Stephen L. Hensley

Senior Intellectual Property Attorney

Telephone Number: (630) 821-2462

Facsimile Number: (630) 821-3383

Facsimile: 571-273-8300

If you have any difficulty receiving this facsimile, please contact Kristi Mikos at 630-821-2266

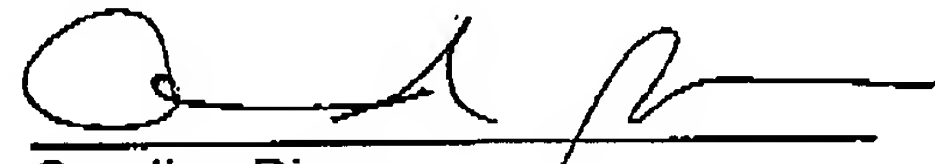
Application No.: 10/713,660 (Confirmation No. 9847)
Filed: November 14, 2003
Group Art Unit: 1625
Examiner: Taylor V. Oh
Attorney Docket: 37,481
Customer No: 04249

Attached please find the following documents:

-Response to Restriction Requirement

Certificate of Transmission

I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office, Fax No. 571-273-8300, on April 14, 2006.


Candice Biwer

This communication contains information from BP America Inc. or its affiliates and is intended only for the personal and confidential use of the addressee(s) named above. This communication may be an attorney-client communication and/or work product and as such is privileged and confidential. If the reader of this message is not the intended addressee(s) or an agent responsible for delivering it to the intended addressee(s), you are hereby notified that you have received this document in error and that any review, dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by return e-mail or FAX, as the case may be, and delete or destroy the original communication.

APR 14 2006

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS: Belmonte et al.)
)
SERIAL NO.: 10/713,660)
)
CONFIRMATION NO.: 9847) GROUP ART UNIT: 1625
)
ATTORNEY DOCKET NO.: 37,481)
)
FILING DATE: November 14, 2003) EXAMINER: Taylor V. Oh
)
FOR: STAGED COUNTERCURRENT)
OXIDATION)

RESPONSE TO RESTRICTION REQUIREMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This paper is submitted in response to the Office Action mailed March 14, 2006, requiring restriction between Group I (claims 1-28) and Group II (claims 29-30).

Applicants elect Group I (claims 1-28) with traverse for reasons discussed below.

Claims 1-28 are for a process for manufacture of aromatic carboxylic acid derivatives of substituted benzenes by a staged, countercurrent oxidation. Claims 29 and 30 are for an intermediate product as produced as a first product mixture according to step (b) of claim 1 or in a first oxidation stage as in step (b). The first product mixture of claim 29 comprises the aromatic carboxylic acid derivative, partially oxidized substituted benzene, unreacted substituted benzene and oxidation reaction solvent, as recited in claim 1 step (b). The first stage product according to claim 30 comprises

about 5-85 wt% terephthalic acid, about 2-20 wt% 4-carboxybenzaldehyde and about 5-65 wt% p-toluic acid and can also include up to 3 wt% hydroxymethylbenzoic acid, up to 30 wt% p-tolualdehyde and up to 35 wt% p-xylene. As claimed, the product mixtures according to claims 29 and 30 are intermediate products produced in the process of claims 1-28. As seen from steps (c) and (d) of claim 1, the process as claimed according to claims 1-28 uses the intermediate product of claim 29 or as in claim 30 as feed material to step (c) of the process.

The process and product claims, 1-28 and 29-30, respectively, thus are clearly linked by a single inventive concept. The process produces the intermediate product mixtures and those product mixtures are used as feed materials in the process.

US 4,394,299 to Puskas is cited in the outstanding action, presumably to support the restriction requirement, but the patent is completely irrelevant to the issue of separateness and distinctness of the process and intermediate product claims of the subject application.

Aromatic carboxylic acids, and particularly terephthalic acid, are most commonly made by liquid phase catalytic oxidation of aromatic feed materials to a crude oxidation product composed primarily of the desired aromatic carboxylic acid but also containing minor amounts of partial or intermediate oxidation products. The crude product of such an oxidation is then purified, typically by palladium-catalyzed hydrogenation of an aqueous solution of the crude product, to convert partial or intermediate oxidation products to species more soluble than the desired product acid in the aqueous reaction medium to facilitate recovery of the desired acid in solid form while leaving the hydrogenated intermediate and partial oxidation products in solution.

The staged countercurrent oxidation process according to process claims 1-28 of the subject application produces a crude product suitable for purification by hydrogenation as described above. In a first stage oxidation according to the claimed process, a first product mixture as claimed in claims 29 and 30 is produced. That intermediate product is further oxidized in a

subsequent stage of the claimed process to produce the final, crude oxidation product. The process disclosed in Puskas is not for making a crude product or oxidizing an aromatic feed material. Rather, Puskas describes a process for purifying a crude oxidation product to reduce levels of oxidation by-products.

Aromatic carboxylic acid product and partially oxidized aromatic feed materials, for example 4-carboxybenzaldehyde and p-toluic acid when the aromatic carboxylic acid is terephthalic acid, are present in both the intermediate product of claims 29 and 30 and in the purified aromatic carboxylic acid products made according to the process of Puskas. However, amounts of those components in the respective products are very different. Another difference between the intermediate products of the claimed process, as claimed in claims 29 and 30, and the products of Puskas' process is that the claimed intermediate products include unreacted substituted benzene feed material to the first stage oxidation. With respect to levels of partially oxidized feed materials, it can be seen throughout Puskas (for example at Col. 1 lines 19-22, Col. 4 lines 53-57 and Col. 5 lines 7-13) that 4-carboxybenzaldehyde levels of the patent's purified terephthalic acid products are no more than about 100 ppm (= 0.1 %) and p-toluic acid levels are not more than about 2000 ppm (= 2 %). By difference, terephthalic acid contents of the purified terephthalic acid products of the process of Puskas are about 98 wt% or greater. Puskas also is silent about any unreacted substituted benzenes or other aromatic feed materials to oxidation present in its purified terephthalic acid products. In contrast, the intermediate oxidation product mixture of claim 29 comprises unreacted substituted benzenes not disclosed in Puskas. Further, the intermediate product mixture of claim 30 includes 4-carboxybenzaldehyde levels of about 2 - 20 wt%, which is 20 - 200 times more than the maximum 4-carboxybenzaldehyde level in Puskas' purified products, p-toluic acid levels of about 5 - 65 wt %, which are more than double to 30 times the 2000 ppm in Puskas purified products, and not more than about 85 wt% aromatic carboxylic acid, which is more than 10 wt% less than the amount in Puskas purified product.

Accordingly, it is obvious that if Puskas is considered for what it actually and fairly describes, the patent cannot be considered to disclose a process that supports the restriction requirement. It plainly is not "another materially different process" by which products as claimed in claims 29 and 30 can be made.

In view of the above the restriction requirement is contrary to the single and unifying inventive concept common to both process claims 1-28 and intermediate product claims 29 and 30. The restriction requirement is also clearly unsupported by the Puskas patent cited in the outstanding action. No other basis has been advanced for the outstanding action's position that the product as claimed in claims 20 and 30 can be made by another materially different process.

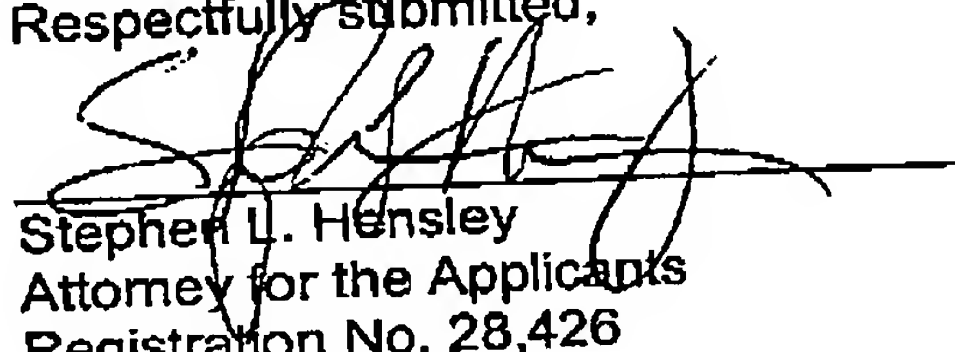
Accordingly it is submitted that the restriction requirement is inappropriate and withdrawal of the requirement is respectfully requested.

Dated: April 14, 2006

Correspondence Address:
BP America Inc.
Docket Clerk, BP Legal, M.C. 5 East
4101 Winfield Road
Warrenville, IL 60555

Customer No.: 04249

Respectfully submitted,



Stephen L. Hensley
Attorney for the Applicants
Registration No. 28,426
(630) 821-2462